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**IN THE CLAIMS:**

Please amend the claims as follows. Claims 1-20 are currently pending.

Claim 1 (Original): A radiation detector comprising

a main body, and

a radiation detection probe detachably attached to the main body,

the radiation detection probe having a detection unit including a radiation detection element, and a first terminal electrically connected to the radiation detection element,

the main body having a connector to which the proximal end of the radiation detection probe is detachably mounted, the connector including a second terminal which is detachably connected to the first terminal when the radiation detection probe is mounted to the connector,

and

a collimator for collimating radiation being provided in the distal end portion of the radiation detection probe.

Claim 2 (Original): The radiation detector according to Claim 1, wherein

the detection unit has an input face which transmits the radiation,

the radiation detection element is arranged so as to receive the radiation which has passed through the input face, and

the collimator is an opening which faces the input face.

Claim 3 (Currently Amended): The radiation detector according to Claim 1 ~~or~~ 2,

wherein

the radiation detection probe further has a cap-shaped shield member which is mounted to the detection unit so as to cover the radiation detection element,

the shield member is made of a material which blocks the radiation,  
the shield member has a front wall facing the radiation detection element, and a  
cylindrical side wall which extends from the edge of the front wall, and  
the collimator is a through-hole provided in the front wall.

Claim 4 (Original): The radiation detector according to Claim 3, wherein the radiation  
detection probe further comprises:

a cap-shaped probe cover which covers the shield member and the detection unit, the  
probe cover being detachably mounted to the connector; and

a seal ring sandwiched between the probe cover and the connector to seal the main body  
and the radiation detection probe when the probe cover is mounted to the connector.

Claim 5 (Original): The radiation detector according to Claim 4, wherein  
the shield member is disposed in the probe cover to allow a hollow portion of the shield  
member and a hollow portion of the probe cover to communicate with each other, and  
the detection unit is fitted into these hollow portions which communicate with each other.

Claim 6 (Original): The radiation detector according to Claim 5, wherein the shield  
member is detachably provided in the probe cover.

Claim 7 (Original): The radiation detector according to Claim 5, wherein the shield  
member is fixed in the probe cover.

Claim 8 (Currently Amended): The radiation detector according to ~~any one of Claims 4 to 7~~ Claim 4, wherein

the probe cover has a cap-shaped first component detachably mounted to the connector, a cap-shaped second component detachably attached to the first component to accommodate and fix the shield member, and a seal ring sandwiched between the outer surface of the first component and the inner surface of the second component to seal the probe cover when the second component is attached to the first component, and

the second component is attached at positions variable along the axis of the probe cover.

Claim 9 (Currently Amended): The radiation detector according to ~~any one of Claims 4 to 8~~ Claim 4, wherein

the probe cover has an input plate facing the front wall of the shield member to close an end of the collimator, and a cylindrical side wall extending from the edge of the input plate to surround the side surfaces of the shield member and the detection unit, and

the input plate is made of a material which transmits the radiation and blocks an electromagnetic wave having an energy of 1 keV or less.

Claim 10 (Currently Amended): The radiation detector according to ~~any one of Claims 4 to 9~~ Claim 4, wherein

the detection unit has a casing for accommodating the radiation detection element, an opening is provided on the distal end of the casing so as to extend from an end face of the casing toward the radiation detection element, and

the opening has substantially the same cross-section as that of the collimator and communicates with the collimator.

Claim 11 (Currently Amended): The radiation detector according to Claim 1 ~~or 2~~, wherein the radiation detection probe further includes:

a cap-shaped probe cover which covers the detection unit, the probe cover being detachably mounted to the connector; and

a seal ring sandwiched between the probe cover and the connector to seal the main body and the radiation detection probe when the probe cover is mounted to the connector,

the probe cover is made of a material which blocks the radiation, and

the collimator is an opening provided on the distal end of the probe cover to extend toward the radiation detection element.

Claim 12 (Original): The radiation detector according to Claim 11, wherein

an input plate for closing an end of the collimator is provided on the distal end surface of the probe cover, and

the input plate is made of a material which transmits the radiation and blocks an electromagnetic wave having an energy of 1 keV or less.

Claim 13 (Currently Amended): The radiation detector according to ~~any one of Claims 1 to 4~~ Claim 1, wherein

the connector further includes a support bar protruding from the distal end of the main body and being thinner than the radiation detection probe, and

the support bar has a proximal end connected to the distal end of the main body and a distal end connected to the radiation detection probe.

Claim 14 (Original): The radiation detector according to Claim 13, wherein the connector further includes a slide member slidably attached to the support bar, and the collimator moves along with the slide member, and the distance between the collimator and the radiation detection element varies when the slide member slides relative to the support bar.

Claim 15 (Currently Amended): The radiation detector according to ~~any one of Claims 1 to 14~~ Claim 1, wherein one of the first and second terminals is a pin, and the other is a socket into which the pin is fitted.

Claim 16 (Original): The radiation detector according to Claim 15, wherein the pin includes a plurality of pins having different fitting lengths and different polarities, and the socket includes a plurality of sockets having fitting lengths and polarities corresponding to the plurality of pins.

Claim 17 (Original): A radiation detector comprising a main body, and a radiation detection probe detachably attached to the main body, the radiation detection probe having a radiation detection element, and a first terminal electrically connected to the radiation detection element, a cylindrical element cover surrounding the radiation detection element, and a cylindrical casing for accommodating the element cover,

the main body having a connector to which the proximal end of the radiation detection probe is detachably mounted, the connector including a second terminal which is detachably connected to the first terminal when the radiation detection probe is mounted to the connector, the element cover being made of a material which blocks radiation, and the radiation detection element being disposed behind the distal end of the element cover.

Claim 18 (Original). The radiation detector according to Claim 17, further comprising a fastener detachably mounted to the main body to fasten the radiation detection probe to the connector.

Claim 19 (Original): The radiation detector according to Claim 18, further comprising a seal ring sandwiched between the fastener and the connector to seal the main body when the fastener is mounted to the connector.

Claim 20 (Currently Amended): The radiation detector according to ~~any one of Claims 17 to 19~~ Claim 17, wherein

an input plate facing the radiation detection element is provided on the distal end surface of the casing, and

the input plate is made of a material which transmits the radiation and blocks an electromagnetic wave having an energy of 1 keV or less.